July 7, 2004

SENT BY E-Mail, and First Class U.S. Mail

Cheryl M. Kimball Keegan, Werlin & Pabian, LLP 265 Franklin Street Boston, MA 02110

Re: New England Gas Company, D.T.E. 04-06

Dear Ms. Kimball:

Enclosed is the third set of information requests by the Department of Telecommunications and Energy to New England Gas Company regarding the above-captioned matter. Please submit copies of the Company's responses to the information requests to the Department by 5:00 p.m., July 21, 2004.

Should you have any questions please contact me at (617) 305-3762. Thank you for your prompt attention to this matter.

Sincerely,

Jody Stiefel Hearing Officer

Enc.

cc: Service List

Mary Cottrell, Secretary

# THIRD SET OF INFORMATION REQUESTS OF THE DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY TO NEW ENGLAND GAS COMPANY

Pursuant to 220 C.M.R. 1.06(6)(c), the Department of Telecommunications and Energy ("Department") hereby submits to New England Gas Company ("New England" or "Company") the following information request(s) with respect to the December 30, 2003 Forecast and Supply Plan filing, D.T.E. 04-06.

#### **INSTRUCTIONS**

The following instructions apply to this set of Information Requests and all subsequent Information Requests issued by the Department to the Company in this proceeding.

- 1. Each request should be answered in writing on a separate, three-hole punch page with a recitation of the request, a reference to the request number, the docket number of the case and the name of the person responsible for the answer.
- 2. Do not wait for all answers to be completed before supplying answers. Provide the answers as they are completed.
- 3. These requests shall be deemed continuing so as to require further supplemental responses if the Company or its witness receives or generates additional information within the scope of these requests between the time of the original response and the close of the record in this proceeding.
- 4. The term "provide complete and detailed documentation" means:
  - Provide all data, assumptions and calculations relied upon. Provide the source of and basis for all data and assumptions employed. Include all studies, reports and planning documents from which data, estimates or assumptions were drawn and support for how the data or assumptions were used in developing the projections or estimates. Provide and explain all supporting work-papers.
- 5. The term "document" is used in its broadest sense and includes, without limitation, writings, drawings, graphs, charts, photographs, phono-records, microfilm, microfiche,

computer printouts, correspondence, handwritten notes, records or reports, bills, checks, articles from journals or other sources and other data compilations from which information can be obtained and all copies of such documents that bear notations or other markings that differentiate such copies from the original.

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- 6. If any one of these requests is ambiguous, notify the Hearing Officer so that the request may be clarified prior to the preparation of a written response.
- 7. Please serve a copy of the responses on Mary Cottrell, Secretary of the Department, one copy to the Service List, four copies to Andreas Thanos, of the Department's Gas Division, and submit one copy of the responses to Jody M. Stiefel, Hearing Officer.

## Requests

- DTE 3-1 Please refer to the Company's response to DTE 2-9. In this regard:
  - (A) explain why the Company did not conducted a Durbin-Watson test;
  - (B) conduct a Durbin-Watson test to test for first order autocorrelation
  - (C) if applicable, please reestimate the models to correct for serial autocorrelation using the appropriate econometric estimation techniques (e.g., Generalized Least Squared Estimation, Cochrane-Orcutt Procedure...);
  - (D) present the R-squared and Adjusted R-squared of the final econometric specification;
  - (E) provide a measure of forecasting accuracy (<u>e.g.</u>, Mean Absolute Deviation ("MAD");
  - (F) explain why the sendout and sales models are used to forecast daily load under normal and design weather conditions for 2002;
  - (G) clarify what the variable WEEKEND is used for, is it a dummy variable set to one for weekend days or a dummy variable set to one for Sundays; in the six months of winter (see p. 1 at DTE 2-9).
- Please explain which of the following models are used to forecast load under normal and design weather conditions and to determine the adequacy of supply: daily sendout and sales regression models (see p. 19 of the Company's filing) or customer class regression models (see Volume II of the Company's filing).
- Please refer to the Company's response to DTE 2-29 (d). Please compute and present a measure of forecasting accuracy (e.g., MAD) of each of the forecasting models presented in Volume II of the Company's filing. Discuss how the Company evaluates the predictive ability of the forecasting models.
- The Company states that a good forecasting model should satisfy the standard of statistical reliability (see the Company's response to DTE 2-28). In this regard, please discuss why the Company did not correct for first order serial autocorrelation for the following regression models: residential Regular Customers, Residential Regular Usage, Residential Heating Usage, C&I LLF Customers, C&I LLF Usage, C&I HLF Customers, and C&I HLF Usage.
- DTE 3-5 Please discuss whether or not the Company would agree with the following statement: "Ignoring the existence of serial autocorrelation means that the reported covariance matrix for the least squares estimators will be biased. In

addition the R<sup>2</sup>, standard errors, the interval estimates, and consequently the hypothesis tests will be invalid."

## DTE 3-6 Please refer to the Company's response to DTE 2-30. In this regard:

- (A) explain why the Company indicates that the degree of such serial autocorrelation is not likely to bias or distort the predictive ability of the model;
- (B) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been corrected by applying one the standard methodologies available in the econometric literature;
- (C) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure) and present the quarterly backcast for the period 1998-2002;
- (D) provide a measure of forecasting accuracy (e.g., MAD).

# DTE 3-7 Please refer to the Company's response to DTE 2-32. In this regard:

- (A) explain why the Company indicates that the predictive ability of the model does not appear to be adversely affected by the presence of serial autocorrelation;
- (B) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been corrected by applying one the standard methodologies available in the econometric literature;
- (C) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure);
- (D) provide a measure of forecasting accuracy (e.g., MAD).

#### DTE 3-8 Please refer to the Company's response to DTE 2-35. In this regard:

- (A) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been eliminated by applying one the standard methodologies available in the econometric literature;
- (B) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure);
- (C) provide a measure of forecasting accuracy (e.g., MAD).

# DTE 3-9 Please refer to the Company's response to DTE 2-37. In this regard:

- (A) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been eliminated by applying one the standard methodologies available in the econometric literature;
- (B) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure);
- (C) provide a measure of forecasting accuracy (e.g., MAD).

#### DTE 3-10 Please refer to the Company's response to DTE 2-38. In this regard:

- (A) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been eliminated by applying one the standard methodologies available in the econometric literature;
- (B) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure);
- (C) provide a measure of forecasting accuracy (e.g., MAD).

### DTE 3-11 Please refer to the Company's response to DTE 2-40. In this regard:

- (A) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been eliminated by applying one the standard methodologies available in the econometric literature;
- (B) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure);
- (C) provide a measure of forecasting accuracy (e.g., MAD).

# DTE 3-12 Please refer to the Company's response to DTE 2-41. In this regard:

- (A) explain why the Company calibrates the forecasting results to compensate for the effects of first order serial autocorrelation when autocorrelation could have been eliminated by applying one the standard methodologies available in the econometric literature;
- (B) reestimate the model using an appropriate methodology (e.g., Cochrane-Orcutt procedure);
- (C) provide a measure of forecasting accuracy (e.g., MAD).

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Second Set of Information Requests

DTE 3-13 Please compute and provide a measure of forecasting accuracy (<u>e.g.</u>, MAD) of the aggregated firm sendout (models presented in Volume II of the Company's filing) and evaluate the results obtained for the period 1998-2002.